and the irritation caused thereby, that her health and strength were greatly impaired. At the time I saw her she was confined to bed, and it was manifest that, unless something could be done for her relief, she must soon sink. But I was apprehensive that, if I at once severed the neck with the knife, fatal hemorrhage would result. I determined therefore to ligate its neck with a flat ligature (tape-like), tying it with sufficient tightness to greatly impede the circulation, and diminish the volume of the neck preparatory to its section by the knife. I continued to increase the constriction daily for three days, the tape deeply impressing the neck; but the irritation became so great that I was compelled to incur the risk of immediate amputation. Accordingly, I made the section of the neck with one stroke of the knife. The stump was immediately retracted within the vagina, and a pretty copious gush of blood resulted. The flow was from an indefinite number of small vessels, which circumstance, together with the retraction, greatly embarrassed my efforts to secure the arteries. I was obliged to rely mainly on styptics and pressure, filling the vagina with a tampon, and supporting it with a T bandage. The patient, however, from irritation and loss of blood, became exceedingly prostrated, and I almost despaired of her recovery. On the fourth day she began to rally, and shortly recovered.

She removed from her country residence, and I never saw her again. She died some five years after the operation, from maladies bearing no direct relation to her uterine trouble.

I learned from the physician who attended her, that she regularly menstruated, though scantily, after the operation. I have the tumour now in my collection.

Had I been then acquainted with the use of the elastic cord, I doubt not that I could have removed the organ without the use of the knife, and with far less pain and peril to the patient.

ART. XIV.—*Syphilitic Intra-cranial Disease.* By C. ELLERY STEDMAN, M.D., and ROBERT T. EDES, M.D., of Boston.

A. B., aged 32, single, yeoman U. S. Navy, entered Boston City Hospital 24th October, 1871, in the service of Dr. C. E. Stedman. The hospital record made by Dr. C. E. Wing, then house physician, is as follows: Family history rather obscure. He entered the navy thirteen years ago, and soon contracted gonorrhœa, which he has had several times. He does not know that he has had a sore on the penis, but has noticed abrasions at times, and thinks he may have had syphilis; was salivated ten years ago when he had yellow fever, and has taken no mercury since. He thinks he recovered perfectly from the results, but the gums now recede much from the teeth. Is rather bald, but never had any particular falling out of hair, and never noticed any eruption on skin. There are small hard glands in neck and groin, and another small one at the left elbow, none of them tender. Fifteen months ago he had ulcers in the throat, which were "burned with caustic;" these returned a year ago, when he was told he had syphilis, and took iodide of potass. with relief.

Six months ago he began to have "trouble in chewing" on the right side of jaw; a month later was taken with pain and numbness in right side of face and about right eye, and had three teeth extracted without relief; one month afterward "eye became affected." Then went to Rio Janeiro in a man-of-war, where, on account of increase of his disease, he was discharged, and has just returned home, "having been treated like a dog on the passage." He has taken much laudanum to gain relief from his great pains.

Patient in bed, much emaciated, weighing, he thinks, less than 100 pounds. Pulse 84; respirations 20; temperature 100°. Ptosis of right eyelid, which, however, he can overcome for a short time by trying. Tarsal adhesive inflammation. Cannot turn right eye inwards, or upwards and outwards; the other movements seem normal. There is constant numbness and some aching in parts supplied by the fifth cranial nerve of right side. He is troubled by mucus collecting in right nostril, and has slight deafness of right ear. The pupils are normal. Appetite good; bowels regular; micturition free; tongue pretty clean. Complains of pain in all joints; no apparent paralysis of limbs. He was put on twenty-grain doses of iodide of potass. thrice daily, and morphia *pro re nata;* and there was marked improvement. On the 28th he complained of some pain in the left side of face and body, which gave him a bad day. Around the left eye there is considerable redness and swelling, but no pain.

30*th*. Has had fair nights, under moderate doses of morphia. This morning has had some pain about the left eye, but the redness had almost gone; complains of anorexia. Pulse 104; respirations 20; temperature 99.2°.

31*st*. This afternoon patient finds that the sight of the *right* eye is almost gone; can just recognize the house physician. No pain of right eye of any amount, but the left eye continues painful. Now takes thirty grains of iodide of potass. thrice daily.

November 1. Says that with the right eye he can only see out of the "inside corner," and that not distinctly. The numbness of the right side of face continues; only slight pain about left eye to-day. He can now raise the eyelid freely, and the motions of the eyeball improve. An ophthalmoscopic examination of the right eye by Dr. Williams shows "retinal veins engorged; arteries small, and here and there obscured by exudation; papilla somewhat pushed forwards, and its outline indistinct."

3*d*. Sore throat, salt taste in mouth, eruption like acne on left face; the iodide omitted.

6*th*. All movements of lid and eye improved, and vision restored to the right eye; the numbness of right face much less, so that he says he "can feel pain as he used to." Still a little pain about both eyes.

8*th*. This day complains of considerable pain around *left* eye, and its vision is affected. Throat not sore. The iodide resumed in ten-grain doses. The ophthalmoscope shows the same changes in the left eye that were observed in the right, 1st November. Both pupils dilated.

10*th*. Much pain in both eyes yesterday afternoon, requiring several doses of morphia. This morning the right temple swollen, and several tender swellings on forehead.

13*th*. The swellings nearly gone.. Had headache and vomiting yesterday. To-day some "stiffness" of right side of face, felt perhaps before, but not mentioned. The tip of the tongue is turned a little to the left when protruded, but not much. Still requires morphia.

18th. Vomiting and nausea each morning for several days. The iodide has been omitted again. A loose tooth was removed. The circumorbital pains are less; sees better with left eye than with right.

21st. Nausea checked, and pain almost gone, except from front teeth in lower jaw which are bare to the roots. Patient has gained flesh since his stay in the hospital, and looks like another man. He can, with a little exertion, move the right eye as well as the left; he is able to read the newspaper nicely with the left eye, and can see pretty well with the right; is up and dressed daily, and anxious to go home.

22d. Iod. pot. gr. v. ter die.

23d. Feeling hearty; eruption again appearing on face. Discharged.

December 9. Readmitted; continued to improve till twelve days ago, when for the first time he slept in a cold room on a bitter cold night, and next morning had pain "all over head" which lasted till two days ago, when all pain, except about the right upper canine tooth, ceased. Four days ago when applying cerate to eyelid he found he was putting it directly on the eyeball, and then for the first time discovered that there was loss of sensation there and in the anterior half of right side of head; the tooth was tender and the adjacent gum easily bleeding. The patient's eyeball can be freely touched without his feeling the contact; the conjunctiva a little injected and right side of face looks a little swollen. Has taken the iodide pretty faithfully since he left the hospital, and shows the effect by the eruption on the face. For the last three or four days he has vomited "yellow stuff" every morning. General health much improved; a small bit of dead bone came from the socket of a tooth drawn when he was in hospital before, several days after leaving it; has trouble in chewing; functions of body well performed; no febrile symptoms.

11th. Loss of sensation not complete, of parts described above; right temporal muscle much smaller than left, so that it can hardly be felt; right upper canine and lateral incisor extracted.

13th. Face nerve feels natural.

14th. Examined with ophthalmoscope by Dr. Wadsworth; nothing abnormal observed.

16th. Patient says he feels all "as it ought to be," except tenderness in gums from loss of teeth, and eye is "still queer, but coming all right." Discharged at his own request.

During the winter he lived in Roxbury, where he was attended by Dr. Stedman. He had almost constant pain over right eye, and took morphia in unknown doses; he was readmitted to the hospital

March 12, 1872. Service of Dr. Borland. The record states that the sensation of the face was normal, but the cornea of right eye could be touched without feeling; the tongue protrudes in median line; constipated, but otherwise feels well; temperature 98°; pulse 84; respiration 22.

23d. Says that he has no pain when taking large doses of iodide of potass.

30th. Discharged relieved.

During the summer he was treated as an out-patient for ulceration of cornea of the right eye, but was otherwise sufficiently well to effect an insurance on his life; he was admitted again to the hospital

August 29, 1872. Service of Dr. Edes. It is recorded that patient talks indistinctly and his statements cannot be relied on; says that since his last discharge from hospital his health has been poor and he has been growing worse lately. Yesterday he had diarrhœa and vomiting, which continue; is in bed much emaciated; extremities cold; pulse 96; tongue coated; no appetite; much thirst; two or three dejections daily.

September 4. Ophthalmoscope showed fundus of each eye normal.

5th. Mouth drawn to the right; cannot move left side of face as well as right.

25th. Discharged.

Mr. B. boarded in a bleak spot in Dorchester during this very cold winter, and had a cold room; he gradually failed, losing his faculties, sensation, and motion; he died 25th February, 1873. The autopsy was made by Drs. Edes and Stedman.

Notes by Dr. EDES. All organs appeared to be healthy, except the lungs, the upper portions of which were studded with small tubercles, and the brain surface and substance somewhat congested; substance of the brain hard. A considerable amount of serum in the ventricles. In the *right* middle cerebral fossa the apex of the temporal lobe was adherent and softened, so that upon removing it small fragments remained attached to the dura mater. This condition extended over a space about an inch in diameter, lying partly over the Gasserian ganglion; dura mater thickened, but the bone beneath it appeared healthy.

Gasserian ganglion decidedly thickened as compared with that of the other side; optic chiasm surrounded with lymph, which was especially abundant upon the right optic nerve; upon the arteries of the Sylvian fissure upon both sides were seen white or thickened patches in the walls. In one or two places the arteries were covered with an exudation of lymph. Two bloodvessels on the posterior pyramids, one upon each edge of the floor of the fourth ventricle, showed similar thickened portions, especially on the left side.

On microscopic examination of the fresh specimens the *left* (comparatively healthy) Gasserian ganglion contained, besides nerve fibres and cells, numbers of small, round and oval (indifferent) cells. The right contained more of the same cells, some spindle cells, and more old fibrous tissue.

The soft substance adherent to the cerebral surface of the dura mater was finely granular, and contained round and oval nucleated cells. No healthy pyramidal cells were seen. Some yellow pigment in the course of the vessels. In one place a group of very darkly granular triangular cells was seen, evidently cerebral from their shape, but not presenting the usual appearance of fatty degeneration. It seems possible that the degeneration was of a calcareous character.

Sections of specimens hardened in chromic acid and alcohol showed a much greater abundance of connective tissue in the right Gasserian ganglion than in the left. Nerve cells and fibres were distinct in both. In the right, however, the single cells seemed to be somewhat more separated from each other. No clearly defined difference in the appearance of individual cells could be made out. The number of pigmented cells seemed larger upon the left. Pigment granules not in the nerve cells were seen on both sides.

Sections were made of the thickened arteries, especially of one not mentioned above, which was afterwards found at the base of the brain, partially embedded in the cerebral substance. The best starting-point in the examination of these sections is the muscular coat, which presents its normal appearance. Externally, we find a layer of many cells mostly round or oval, but in many places surrounding the *muscularis,* and evidently replacing or representing the adventitia. There is, however, no distinct limitation, but the accumulation of cells spreads out upon both sides into the pia mater, and sometimes embraces many smaller vessels. At the point of contact of the artery with the cerebral surface and opposite to this, the cellular layer is less thick, and probably here represents pretty accurately quantitatively the *adventitia.*

Internally to the muscular coat, forming sometimes a ring of uniform thickness, and sometimes much thicker on one side than another, we find the *intima,* composed of parallel bundles of tissue with circular and oval spaces. Many or most of these spaces are occupied by a body which probably represents a nucleus. The spaces are more abundant and larger at the edge nearest the lumen of the artery and furthest from the *muscularis.* In some places these spaces or cells present very much the appearance of several irregular layers of epithelium lining the artery. The inner portion of the *intima* is stained with blood. Where the intima is most hypertrophied, the lumen of the artery, if we regard the circular fibres of the *muscularis* as occupying the normal position, cannot exceed one-half its former diameter, or one-fourth of its area.

Immediately beneath the artery, imbedded in the brain-substance from which most of the sections were made, the cerebral substance appeared, as it were, crowded, the outer layer being no longer distinguishable at this point, and the cellular elements being increased in number. The smaller vessels penetrating the brain may have had the nuclei of their sheaths somewhat increased in number, but this change was at any rate not very marked.

The changes in what is here spoken of as the outer layer of the intima, according to Kölliker, correspond quite nearly to those spoken of by Cornil in the inner layers of the middle coat in varicose veins. The structures described are undoubtedly similar. Cornil, however, states that the inner layer is distinctly marked off from the hypertrophied connective tissue of the media, which was not the case in our specimens; a difference possibly to be accounted for by the difference in the form between the epithelium of veins and arteries; the latter being longer and more spindle shaped.

In the arteritis described by Charcot and Bouchard, in connection with miliary cerebral aneurisms, the proliferation seems confined, or nearly so, to the external coat of the artery, the internal being slightly if at all affected.

This case presents several points of interest, beside the correspondence between the more prominent symptoms observed during life and the lesions discovered after death, which is sufficiently obvious.

The lesion of the ganglion here observed, namely—the hypertrophy of connective tissue, seems to be almost the only one to which the outlying ganglia are liable, except the atrophy of the fine nervous elements, which is, after all, probably a mere consequence or second stage. This atrophy could not be distinctly made out in our case.[1]

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[1] Since the writing of these notes an article has appeared by Petrow (*Virchow's Archiv,* 1873, lvii. 121, and *Centralblatt für die Medicinischen Wissenschaften,* 1873, p. 510), upon the changes of the sympathetic ganglia in persons affected with constitutional syphilis. He finds the interstitial tissue thicker and denser than normal, the nerve cells being more or less compressed and deformed. The nerve

The nervous and cerebral disorders associated with constitutional syphilis are interesting both in a theoretical and especially in a practical point of view, since symptoms of equal severity justify a far more favourable prognosis and are far more amenable to treatment when consequent on syphilis, than when the result of some non-specific lesion whose precise character it is usually difficult or impossible to diagnosticate. These symptoms are usually attributed to and in fact are very generally produced by syphilitic neoplasms or gummata, or by syphilitic periostitis. The latter mode is shown in our case so far as the lesion of the fifth pair is concerned.

It would certainly seem, however, that arterial lesions like those observed in this case must play an important part in the production of symptoms, and a recent author to whose writings I regret not to be able to refer more definitely, has suggested that some of the characteristics of syphilitic brain disease, and especially the rapidity of variation in the severity of the symptoms, and their frequent paroxysmal character may well be accounted for by supposing them to depend on vascular derangement. We can easily see how those variations in the size of the cerebral arteries which we have every reason to suppose are constantly occurring under the influence of the vaso-motor nerves, and which when the artery is healthy produce only normal physiological changes in the blood supply, may when their calibre is reduced to one-fourth—give rise to a more or less extensive and complete anæmia, and its consequent symptoms. Such might have been the case reported by Passavant. (*Virchow's Archiv*, xxv. p. 170.)

The permanent diminution in the blood supply too can hardly be without effect, and may account for the condition of dementia or "paralysie générale," sometimes observed in syphilitic diseases, and indeed approached in our own case.[1]

The connection between syphilis and aneurism too is a subject not without interest. Although such a connection is asserted, as for instance by Aitken, the causal nexus does not seem in all respects clear. Cases like the present, taken in connection with the views expressed by Virchow, and enlarged upon by Mr. Moxon (*Guy's Hospital Reports*, 1871–72), namely—that atheroma is not primarily a degeneration, but a chronic arteritis—would seem to show that the relation between the syphilitic

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fibres may also be atrophied. The nerve cells contain more than the normal amount of pigment, and their protoplasm has undergone a colloid degeneration. The connective tissue cells forming their capsules are proliferated, and have also a peculiar homogeneous structure. These changes are compared to the interstitial inflammations caused by syphilis in other organs.

[1] Dr. Zespersen, in examining the records of 123 hospital cases of "general paralysis," finds records of constitutional syphilis in 83, a possibility or probability of it in 25, and no data in the remainder. In 34 cases of his own, constitutional syphilis was found in 33 and the 34th had had a chancre. The time elapsing between infection and the beginning of the paralysis varied from 5½ to 20 years, the average being 12.—*Journal de Thérapeutique*, Decembre 10, 1874, p. 908.

dyscrasia and aneurism is by no means a distant one. Mr. Moxon, indeed, doubts whether the cases of aneurism cited by Aitken in support of his view are anything but coincidences, and this is of course possible with the arteritis in our own case. The undoubted specific history, however, the repeated though temporary improvement under treatment, the peculiar character of the symptoms, the age of the patient, the occurrence of the arterial lesions in various portions of the brain, and in connection with others more generally recognized as syphilitic, certainly give a high degree of probability to the view that the connection between constitutional syphilis, and the chronic endo- and ecto-arteritis was more than an accidental one.

BOSTON, November, 1874.

ART. XV.—*On the want of Symmetry in the Length of Opposite Sides of Persons who have never been the Subjects of Disease or Injury to their Lower Extremities.* By WILLIAM C. COX, M.D., of Norristown, Pa.

WITHIN the last few years much has been written concerning the advantages and disadvantages of certain forms of apparatus for the treatment of fractures of the lower extremities, each one being advocated to the exclusion of other forms, as producing better results in regard to the amount of shortening ensuing therefrom. The results in some of the cases being very remarkable, and having noticed that the pantaloon leg on one side became worn much sooner than that of the opposite side, it occurred to me that perhaps there might be a difference in the lengths of the opposite lower limbs in persons who had never received any injury to that part of the body. I proceeded to measure a number of such persons, and found while in some the length of their limbs was equal, in others it varied from $\frac{1}{8}$th to $\frac{7}{8}$th of an inch. There does not seem to be any uniformity in regard to one or the other side being the longer, twenty-three having the right side longest, twenty-five the left side longest, and six having no difference in the two sides. In taking the measurements of lengths of the lower extremities we need only a reliable tape measure, and a firm level surface for the person to lie upon. Before proceeding to measure we should be careful that the person lies flat on his back, and that a line drawn between the crests of the ilii should be parallel with the surface on which the body rests, and the limb on one side should have the same relation to the pelvis as that of the opposite side, and both should be as near in a line with the body as possible. We may place the initial end of the measure between the teeth, on top of the sternum, on the symphysis pubis, or on the anterior spinous process of the ilium. The latter is the point generally used, and the distance from this, or either